[11150/75]

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s)	:	Brian Michael FINN et al.
Serial No.	:	10/623,286
Filed	:	July 18, 2003
For	:	DEVICE AND METHOD FOR OPERATING VOICE-SUPPORTED SYSTEMS IN MOTOR VEHICLES
Examiner	:	Devona E. Faulk
Art Unit	:	2615
Confirmation No.	:	4199

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office via the Office electronic filing system on October 7, 2010.

Signature: /Julie Forero/

VIA EFS-WEB
Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

STATEMENT OF SUBSTANCE OF INTERVIEW

S I R:

This paper constitutes a statement of the substance of the telephone interviews of August 9, 11, and 18, 2010 between the undersigned and Examiner Devona Faulk.

In the telephone interview of August 9, 2010, Examiner Faulk proposed amendments to independent claims 1, 26, 29, and 30 to include a claim element present in independent claim 3. On August 11, 2010, the same proposed amendments were discussed to confirm the understanding of the proposed amendment.

On August 18, 2010, Applicants agreed to Examiner Faulk's proposed amendment, and at Examiner Faulk's request, submitted by email communication a listing of the claims as amended pursuant to the proposed amendment. Copies of this email communication is attached hereto.

Respectfully submitted,

Date: October 7, 2010

By: /Michael Turner/
Michael Turner (Reg. No. 60,314)
KENYON & KENYON LLP
One Broadway
New York, New York 10004
(212) 425-7200
CUSTOMER NO. 26646

Turner, Michael

From: Turner, Michael
Sent: Wednesday, August 18, 2010 11:06 AM
To: 'Devona.Faulk@uspto.gov'
Cc: Ulrich, Clifford; Forero, Julie
Subject: U.S. Patent Application Serial No. 10/623,286
Attachments: U.S. Patent Application No. 10-623,286 Examiner's Proposed Amendment.pdf

Examiner Faulk:

Please see the attached Listing of Claims, amended pursuant to Examiner Faulk's proposed amendment. This amendment was proposed by the Examiner during telephone conversations with Michael Turner (Reg. No. 60,314) on August 9 and 11, 2010.

Regards,

Michael Turner
Reg. No. 60,314
Kenyon & Kenyon LLP
One Broadway | New York, NY 10004-1007
212.908.6210 Phone | 212.425.5288 Fax
mturner@kenyon.com | www.kenyon.com

LISTING OF CLAIMS:

1. (Currently Amended) A method for operating a voice-supported system in a motor vehicle, the system including at least one microphone, at least one loudspeaker, and a bandpass filter arranged between the microphone and the loudspeaker, comprising:

determining a power of a signal as a function of frequency; ~~and~~

adjusting the bandpass filter at least as a function of a derivative of the power of the signal with respect to frequency; and

determining a local maximum of the power of the signal as a function of the derivative of the power of the signal with respect to frequency.

2. (Original) The method according to claim 1, wherein the voice-supported system includes at least one of a communications device, an intercom device, a two-way intercom device, and a duplex telephony device.

3. (Previously Presented) A method for operating a voice-supported system in a motor vehicle, the system including at least one microphone, at least one loudspeaker, and a bandpass filter arranged between the microphone and the loudspeaker, comprising:

determining a power of a signal as a function of frequency;

adjusting the bandpass filter at least one of as a function of at least one local maximum of the power of the signal as a function of the frequency and as a function of a derivative of the power of the signal with respect to frequency; and

determining the local maximum of the power of the signal as a function of the derivative of the power of the signal with respect to frequency.

4. (Previously Presented) A method for operating a voice-supported system in a motor vehicle, the system including at least one microphone, at least one loudspeaker, and a bandpass filter arranged between the microphone and the loudspeaker, comprising:

determining a power of a signal as a function of frequency;

adjusting the bandpass filter at least one of as a function of at least one local maximum of the power of the signal as a function of the frequency and as a function of a derivative of the power of the signal with respect to frequency; and

determining the local maximum of the power of the signal as a function of a first derivative of the power of the signal with respect to frequency.

5. (Previously Presented) A method for operating a voice-supported system in a motor vehicle, the system including at least one microphone, at least one loudspeaker, and a bandpass filter arranged between the microphone and the loudspeaker, comprising:

determining a power of a signal as a function of frequency;

adjusting the bandpass filter at least one of as a function of at least one local maximum of the power of the signal as a function of the frequency and as a function of a derivative of the power of the signal with respect to frequency;

forming a slope signal from a first derivative of the power of the signal with respect to the frequency having a first binary value when the first derivative of the power of the signal with respect to frequency is greater than or equal to zero and a second binary value when the first derivative of the power of the signal with respect to frequency is less than zero; and

determining the local maximum of the power of the signal as a function of a first derivative of the slope signal.

6. (Previously Presented) A method for operating a voice-supported system in a motor vehicle, the system including at least one microphone, at least one loudspeaker, and a bandpass filter arranged between the microphone and the loudspeaker, comprising:

determining a power of a signal as a function of frequency; and

adjusting the bandpass filter at least one of as a function of at least one local maximum of the power of the signal as a function of the frequency and as a function of a derivative of the power of the signal with respect to frequency;

wherein the bandpass filter is adjusted in the adjusting step as a function of a first derivative of the power of the signal with respect to frequency.

7. (Previously Presented) A method for operating a voice-supported system in a motor vehicle, the system including at least one microphone, at least one loudspeaker, and a bandpass filter arranged between the microphone and the loudspeaker, comprising:

determining a power of a signal as a function of frequency;

adjusting the bandpass filter at least one of as a function of at least one local maximum of the power of the signal as a function of the frequency and as a function of a derivative of the power of the signal with respect to frequency; and

forming a slope signal having a first binary value when a first derivative of the power of the signal with respect to frequency is greater than or equal to zero and a second binary value when the first derivative of the power of the signal with respect to frequency is less than zero, the bandpass filter adjusted in the adjusting step as a function of the slope signal.

8. (Original) The method according to claim 7, wherein the bandpass filter is adjusted in the adjusting step as a function of a first derivative of the slope signal.

9. (Original) The method according to claim 1, further comprising determining all local maxima in one frequency range.

10. (Original) The method according to claim 9, further comprising determining a global maximum in the frequency range.

11. (Original) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio at least of the power of the signal at a frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold.

12. (Original) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio at least of the power of the signal at a frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold for longer than a time-ratio-threshold.

13. (Original) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the

power of the signal at a frequency at which the power of the signal is a maximum plus the power of the signal at frequencies of the signal adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold.

14. (Original) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum plus the power of the signal at frequencies of the signal adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold for longer than a time-ratio-threshold.

15. (Original) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum plus the power of the signal at a frequency of the signal that is directly adjacent to the frequency at which the power of the signal is a maximum and at which the power is greater than at a frequency that is also directly adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold.

16. (Original) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum plus the power of the signal at a frequency of the signal that is directly adjacent to the frequency at which the power of the signal is a maximum and at which the power is greater than at a frequency that is also directly adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal at additional frequencies of the signal is greater than a feedback-power threshold for longer than a time-ratio-threshold.

17. (Original) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum plus the power of the signal at a frequency of the signal that is directly adjacent to the frequency at which the power of the signal is a maximum and at which the power is greater than at a frequency that is also directly adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal of all further frequencies of the signal is greater than a feedback-power threshold.

18. (Original) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum plus the power of the signal at a frequency of the signal that is directly adjacent to the frequency at which the power of the signal is a maximum and at which the power is greater than at a frequency that is also directly adjacent to the frequency at which the power of the signal is a maximum to an average value of the power of the signal of all additional frequencies of the signal is greater than a feedback-power threshold for longer than a time-ratio-threshold.

19. (Original) The method according to claim 11, further comprising determining the feedback-power threshold as a function of an output signal of the bandpass filter.

20. (Original) The method according to claim 11, wherein the feedback-power threshold is between 20 and 50.

21. (Original) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum to an average value of the power of the signal at further frequencies at which the power of the signal includes a local maximum is greater than a power threshold.

22. (Original) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step to block a portion of the signal at a notch frequency only when a ratio of the power of the signal at a frequency at which the power of the signal is a maximum to an average value of the power of the signal at all further frequencies at which the power of the signal includes a local maximum is greater than a power threshold.

23. (Original) The method according to claim 21, wherein the power threshold is one of between 20 and 50 and between 30 and 40.

24. (Original) The method according to claim 22, wherein the power threshold is one of between 20 and 50 and between 30 and 40.

25. (Original) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step as a function of an output signal.

26. (Currently Amended) A device for operating a voice-enhancement system, comprising:

at least one microphone;

at least one loudspeaker configured to reproduce a signal generated by the microphone;

a bandpass filter arranged between the microphone and the loudspeaker; and

decision logic configured to adjust the bandpass filter at least as a function of a derivative of a power of the signal with respect to frequency;

wherein a local maximum of the power of the signal is determined as a function of the derivative of the power of the signal with respect to frequency

27. (Original) The device according to claim 26, wherein the bandpass filter includes a filter bank having at least one notch filter.

28. (Original) The device according to claim 26, further comprising an arrangement configured to determine the power of the signal as a function of frequency.

29. (Currently Amended) A device for operating a voice-enhancement system, comprising:

at least one microphone;

at least one loudspeaker configured to reproduce a signal generated by the microphone;

a bandpass filter arranged between the microphone and the loudspeaker;

an arrangement configured to determine a power of the signal as a function of frequency; and

an arrangement configured to adjust the bandpass filter at least as a function of a derivative of the power of the signal with respect to frequency;

wherein a local maximum of the power of the signal is determined as a function of the derivative of the power of the signal with respect to frequency.

30. (Currently Amended) A device for operating a voice-enhancement system, comprising:

at least one microphone;

at least one loudspeaker for reproducing a signal generated by the microphone;

a bandpass filter arranged between the microphone and the loudspeaker;

means for determining a power of the signal as a function of frequency; ~~and~~

means for adjusting the bandpass filter at least as a function of a derivative of the power of the signal with respect to frequency; and

means for determining a local maximum of the power of the signal as a function of the derivative of the power of the signal with respect to frequency.

31. (Previously Presented) The method according to claim 1, wherein the bandpass filter is adjusted in the adjusting step as a function of the derivative of the power of the signal with respect to frequency and as a function of at least one local maximum of the power of the signal as a function of the frequency.

32. (Previously Presented) The device according to claim 26, wherein the decision logic is configured to adjust the bandpass filter as a function of the derivative of the power of the

signal with respect to frequency and as a function of at least one local maximum of the power of the signal as a function of frequency.

33. (Previously Presented) The device according to claim 29, wherein the arrangement configured to adjust the bandpass filter is configured to adjust the bandpass filter as a function of the derivative of the power of the signal with respect to frequency and as a function of at least one local maximum of the power of the signal as a function of the frequency.

34. (Previously Presented) The device according to claim 30, wherein the bandpass filter adjusting means is for adjusting the bandpass filter as a function of the derivative of the power of the signal with respect to frequency and as a function of at least one local maximum of the power of the signal as a function of the frequency.